

What We Are Learning About Guided Pathways

Part 3: Timeline and Tips for Implementing Pathways Reforms

By Davis Jenkins, Hana Lahr, John Fink, and Elizabeth Ganga

Guided pathways reforms can take several years to implement at scale because they require a thoroughgoing redesign of a college's major functions, including:

- organizing programs into career-focused meta-majors to enhance student recruitment and exploration and program improvement;
- mapping clear paths to degrees, employment, and further education in collaboration with employers and universities;
- structuring advising to help students choose, enter, and complete a program of study;
- rethinking academic support to enable students to take and pass critical program courses in their first year of college; and
- training faculty and staff to facilitate these reforms.

CCRC's research on the implementation of guided pathways has revealed that these reforms often follow a similar pattern of development. Figure 1 shows the general stages of this process and an approximate timeline. In colleges where we have seen substantial improvements in student progression and completion, these improvements became noticeable after colleges began to implement the essential elements of the model in concert with one another.

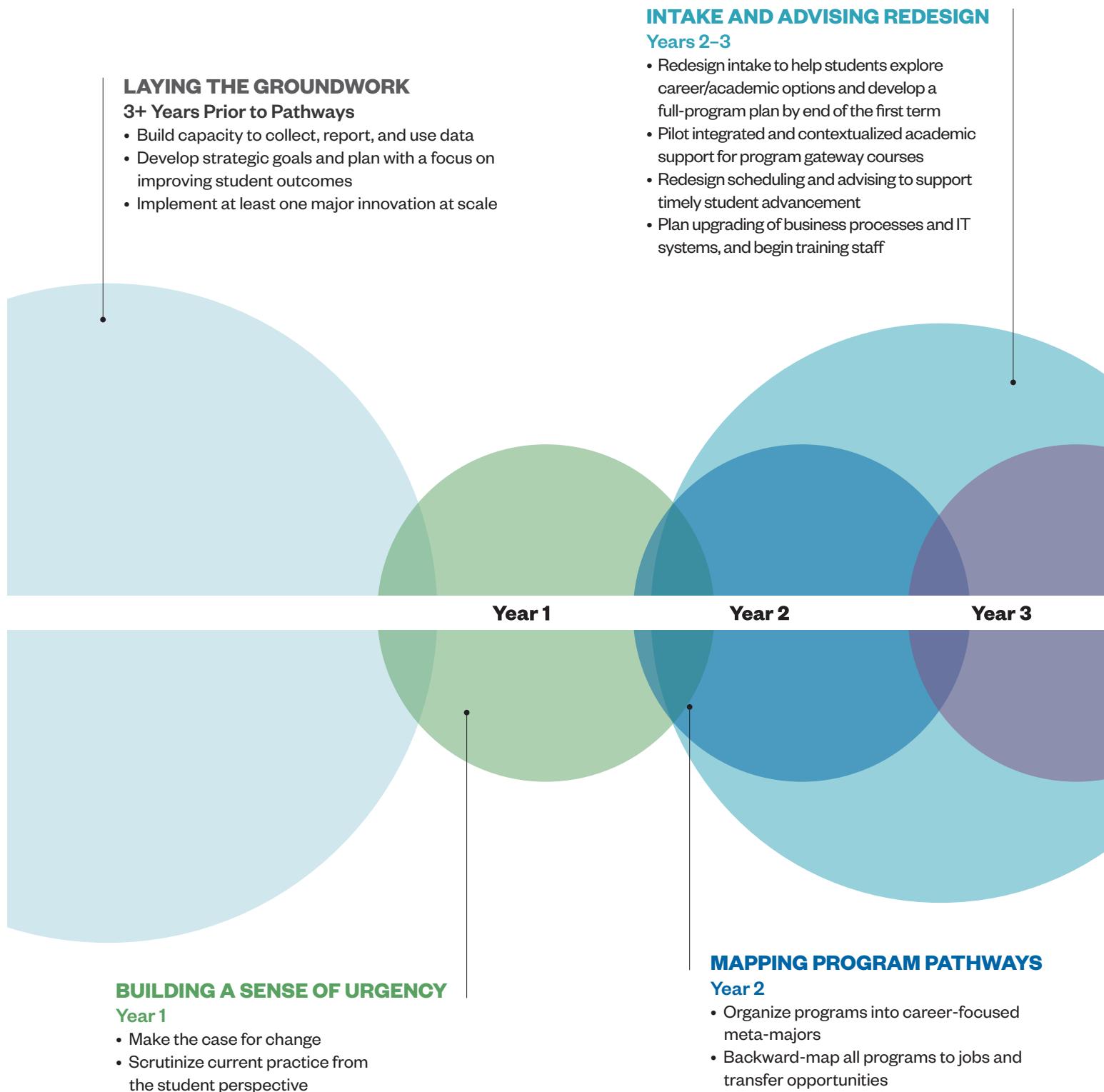


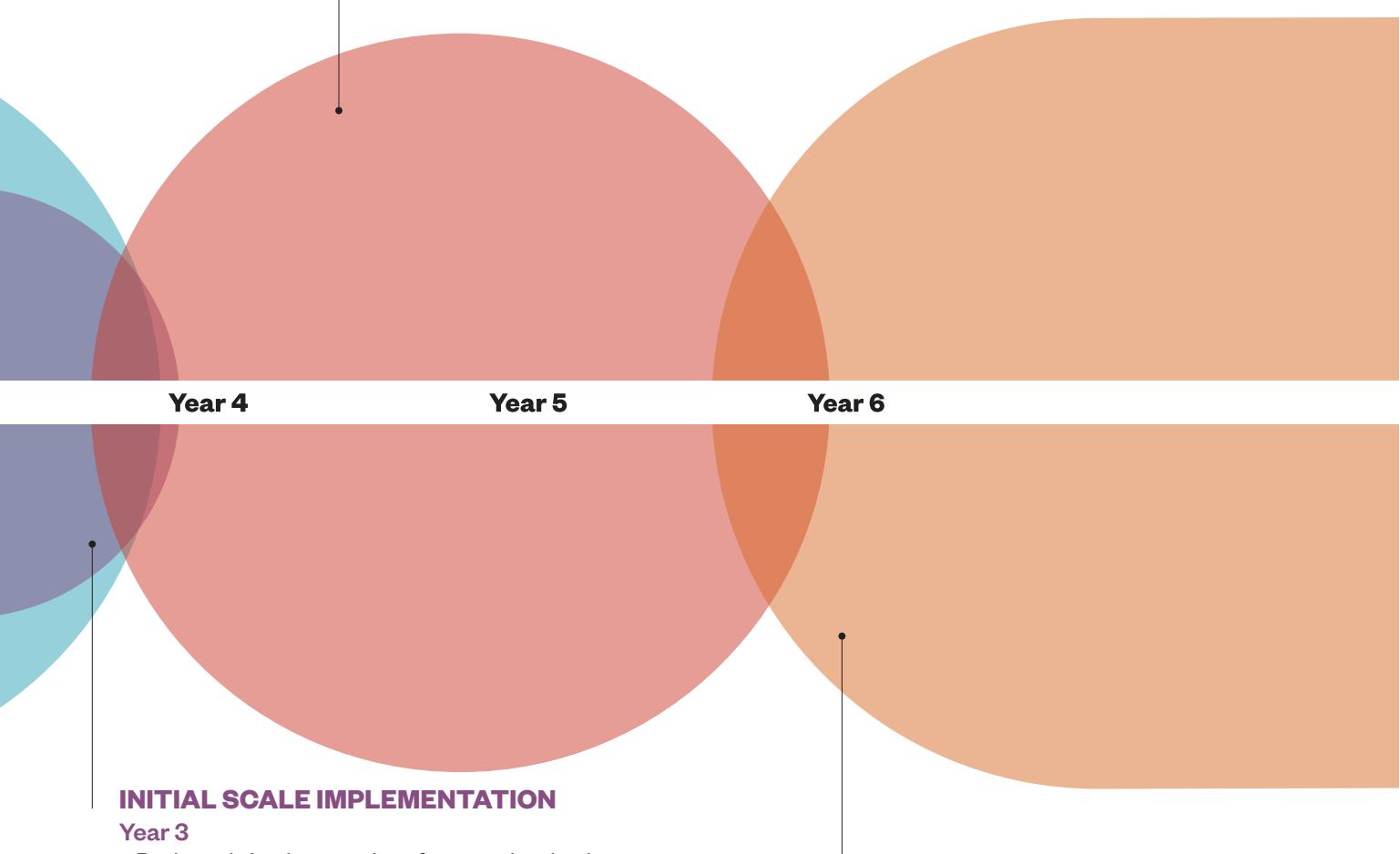
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This visualization represents an idealized conceptualization of the process and timeline based on our observations of colleges that were early adopters of the pathways model. No college will follow these stages precisely as outlined here, and the process is much messier (and probably less linear) in practice.

Figure 1.

Idealized Timeline for Implementing Guided Pathways at Scale





INITIAL SCALE IMPLEMENTATION

Year 3

- Begin scale implementation of new student intake, planning, scheduling, and advising
- Reorganize learning outcomes assessment around meta-majors and program maps
- Implement IT systems and business processes to support pathways
- Plan extension of program pathways into high schools and adult education programs

ONGOING IMPROVEMENT

Ongoing

- Institutionalize program review, improvement, and professional development within and across meta-majors

Laying the Groundwork (3+ Years Prior to Pathways)

Pathways reforms require substantial changes to many aspects of a college's programs, services, business processes, and policies. They also call for changes in mindsets and organizational culture. To prepare to undertake such transformative change, a college's faculty, staff, and administrators must become accustomed to helping to plan and implement major changes.

Cultivating a culture of openness to change takes time. To accomplish this, colleges have:

- created clear, measurable goals for improving student outcomes, along with strategic and operational plans to achieve those goals;
- built their capacity to analyze, report, and use data to improve practice and policy; and
- implemented at least one major innovation at scale—that is, for all students, not just selected groups.

Building a Sense of Urgency (Year 1)

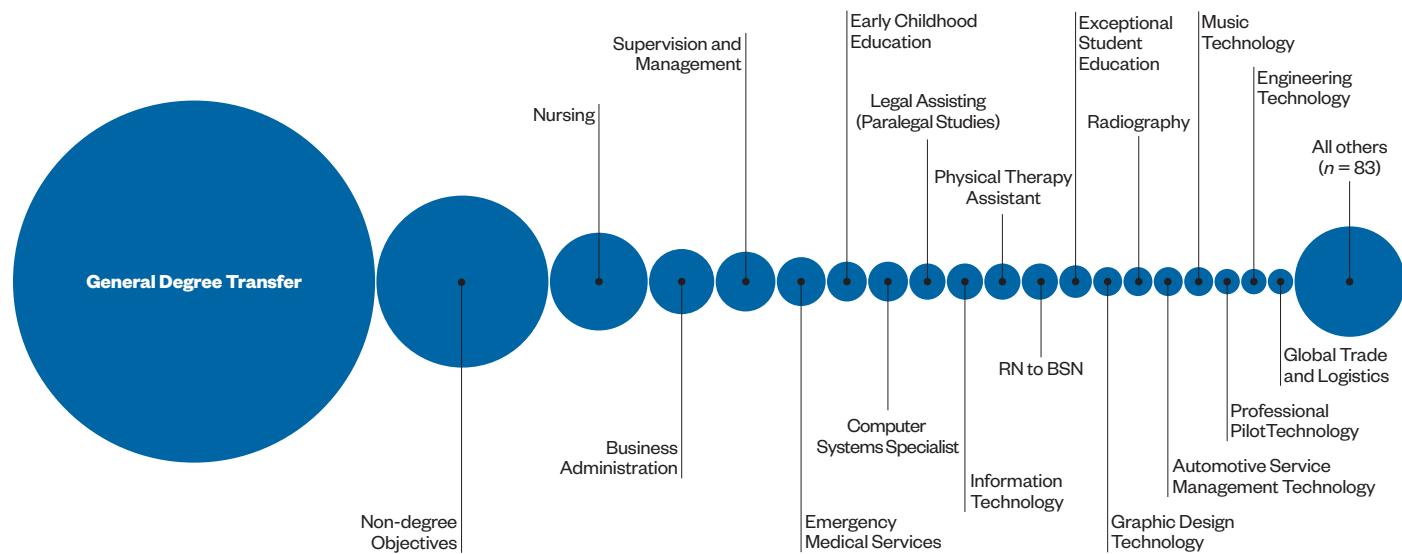
Research on organizational improvement emphasizes the importance of building a sense of urgency among the college community by using data to highlight the need for change.¹

Colleges that have been successful in building a sense of urgency have used data to highlight unacceptably poor student outcomes and disparities among students by race/ethnicity, income, and age. They have also used data to help faculty and staff reflect on the college experience from the student perspective and to help them see barriers to success that college practices create for students.

One exercise that highlights barriers encountered by students is examining the distribution of currently enrolled students by their program designation in the college's student information system. Figure 2 shows the results from one college that used this exercise to help justify the need to implement pathways.

Figure 2.

Top 20 Programs by Enrollment at One College Pre-Pathways



College leaders can use the results of analyses like this to stimulate discussion among faculty and staff on questions such as:

- How accurately does this report reflect what programs students are actually in?
- How well do each of these program designations reflect students' goals—not only in terms of their program goals but also in terms of their aspirations for transfer and careers?
- Are we closely monitoring how far along students are toward completing their program requirements?
- Can students easily access specific information about their progress and what they have to do to complete their program?
- How well do we keep track of changes in students' program choices?
- Which department is responsible for monitoring the progress of students in each program?
- Are there students whose progress is not tracked by an academic department—for example, associate of arts students, students in developmental courses, dual enrollment students, pre-nursing students, or noncredit students?

Colleges can give this exercise even more impact by showing the distribution of program enrollment disaggregated by student race/ethnicity and income. Examining how current practices contribute to inequitable outcomes for students of color, lower income students, and other marginalized student populations—including how and why students are inequitably sorted into programs—can help to build urgency around the need for change and set the stage for future reforms that reduce rather than replicate inequitable outcomes.

Colleges that do this exercise often come to similar conclusions:

- The college does not do a good job of accurately monitoring students' goals. For example, the college does not record students' transfer goals—where they would like to transfer and in what major.
- Most students are in “programs” such as Associate of Arts, Associate of General Studies, Pre-Business, or Pre-Nursing, where no one is responsible for monitoring their progress toward program completion and achievement of goals for their career and further education.
- If the college has no idea how far along students are in the programs, it is not surprising that students are confused too.
- Low-income and racial/ethnic minority students are disproportionately enrolled in programs that lead to shorter term credentials in less remunerative fields.²



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In addition to creating a sense of urgency, college leaders need to articulate a compelling vision of how the college needs to change to address the problems it has identified.

Guided pathways provides a research-based model for thinking about how colleges can improve outcomes for students. At the same time, college leaders need to recognize and address the fear and anxiety that inevitably come with big changes.³

Mapping Program Pathways (Year 2)

A key first step in planning pathways is to convene faculty and advisors to work together to map out programs. The idea is to “start with the end in mind” by backward-mapping the career outcomes associated with each program; indicating which courses students should take in what sequence; and highlighting courses that are critical to success in the program, along with cocurricular requirements and progress milestones. Maps should include an introductory curriculum for new students interested in a given field that facilitates program exploration and selection but also maximizes the applicability of credits, should students change their minds about their program. The math courses required for the program should be dictated by the mathematics required for the field. Students should not be defaulted into an algebra–calculus track just because that has been the convention in the past.⁴

Maps should include detailed information on the employment opportunities targeted by the program and the transfer requirements for bachelor’s programs in related fields. Transfer maps should include a sequence of courses that will allow students to apply all of their credits toward their major at the four-year institution and thus be able to complete a bachelor’s degree with few excess credits, if any. For this reason, mapping teams should work with partner employers and university transfer destinations to review and validate program maps. All of this information needs to be readily accessible on colleges’ websites.

A key purpose of program maps is to help students and their advisors create full-program plans (ideally by the end of their first term) customized to each student’s prior credits, goals for transfer and employment, and desired timeline for completion. Thus, the maps should be considered guides. Program maps will need to be updated regularly as programs change to meet changing transfer and employment requirements.

The mapping process plays another important function as a tool for faculty and staff from across disciplines and divisions to get together to reflect on and help to streamline the student experience and ensure that programs are aligned with transfer and job requirements. Colleges that have taken the mapping process seriously and involved staff from across silos have discovered serious impediments to student progress in the status quo. Faculty and student services staff need to be part of the process, but it is also important to have financial aid, marketing, and recruitment staff contribute. Registrar, information technology, and financial aid staff also need to be consulted regularly during the mapping process, as they will be essential for implementing the systems to support academic plans and student progress monitoring.

Colleges have found it useful to organize their programs and the mapping process around broad fields, or *meta-majors*—see Table 1 for examples from several colleges. Meta-majors should reflect the major occupational fields in the college’s service region targeted by its programs. For example, Lorain County Community College organized its meta-majors (which it calls “career pathways”) around job fields identified as important to the region’s future by Northeast Ohio regional economic development groups.



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Meta-majors help current and prospective students as well as employers and other stakeholders make sense of the many programs most colleges offer. Colleges are also using meta-majors as a framework for marketing programs, recruiting and orienting new students, reviewing programs, and improving instruction.

Table 1.**Sample Meta-Majors at Four Colleges**

ST. PETERSBURG COLLEGE (FL)	LORAIN COUNTY COMMUNITY COLLEGE (OH)	ALAMO COLLEGES (TX)	NORTHEAST WISCONSIN TECHNICAL COLLEGE
"Career and Academic Communities" <ul style="list-style-type: none"> • Arts, Humanities, and Design • Business • Communications • Education • Engineering, Manufacturing, and Building Arts • Health Sciences and Veterinary Technology • Public Safety, Public Policy, and Legal Studies • Science and Mathematics • Social and Behavioral Sciences and Human Services • Technology 	"Career Pathways" <ul style="list-style-type: none"> • Business and Entrepreneurship • Computer and Information Technologies • Culinary and Hospitality • Education • Engineering and Manufacturing • Health and Wellness • Human/Social Services and Public Safety • Liberal and Creative Arts • Science and Math 	"Alamo Institutes" <ul style="list-style-type: none"> • Advanced Manufacturing and Logistics • Business and Entrepreneurship • Creative and Communication Arts • Health and Biosciences • Public Service • Science and Technology 	"Fields of Interest" <ul style="list-style-type: none"> • Agriculture, Food, and Natural Resources • Architecture and Construction • Business • Digital Arts • Energy • Health Sciences • Human Services and Education • Information Technology • Law, Public Safety, and Security • Manufacturing • Science, Technology, Engineering, and Mathematics • Transportation, Distribution, and Logistics
https://go.spcollege.edu/aos/	https://www.lorainccc.edu/programs-and-careers/	https://www.alamo.edu/main.aspx?id=48814	https://www.nwtc.edu/programs/fields-of-interest

Intake and Advising Redesign (Years 2–3)

Once a college has at least a draft of its meta-majors and program maps, work teams can begin the task of redesigning the intake experience for new students with the goal of enabling them to explore options for careers and college; choose a direction; and develop a full-program plan, ideally by the end of their first term. This phase of implementation requires rethinking how a college markets its programs; the application process; new student orientation; initial advising; and introductory curricula for each meta-major, including the academic support for critical courses. Faculty should be involved in this process along with student services personnel, since the goal is to build on-ramps to their programs of study.

Colleges should also convene faculty work groups to develop a plan for improving student success in college-level “gateway” courses for each meta-major identified through the mapping process. Rather than requiring a large portion of students to complete prerequisite developmental education sequences, colleges throughout the country are having success with integrating academic supports into college-level courses.⁵ The goal is to enable students to take and pass college-level math, English, and other critical program courses by the end of their first year.

Finally, work teams of advisors and faculty need to rethink advising more generally to help students make decisions across the full range of their experience at the college.⁶ A common challenge is figuring out the division of labor among faculty, student services staff, and others for monitoring student progress at different points and for responding when students appear to be struggling or straying from their plans. Technology can be helpful in monitoring student progress, providing feedback to students, and alerting college personnel when intervention might be needed. Technology can also help the college schedule classes so that students can take the courses they need each term to make steady progress on their plans. However, the clear lesson from colleges that have used technology effectively for these purposes is that it is best to first redesign the human and business processes and then customize the technology to suit these purposes.⁷ For example, before colleges can make the best use of scheduling software, every student should be on a full-program plan so that the college knows what courses students need to take in any given term.

Initial Scale Implementation (Year 3)

Although it sounds daunting, colleges reporting the most success are those that “go all in” by implementing the following guided pathways practices for all first-time students at the same time:

- program maps and meta-majors;
- reorganized new student intake, program exploration, and planning; and
- integrated, contextualized academic support for critical college-level courses.

With the on-ramp to programs of study in place, colleges can begin to implement redesigned policies and processes for ongoing advising and course scheduling. Colleges can also begin planning to extend meta-majors and program maps into high schools, starting with dual enrollment offerings.

Building Pathways Down Into High Schools Through Dual Enrollment

Colleges should encourage high school students and their families to think of dual enrollment as an opportunity to explore academic and career interests and an entry point to college programs and related transfer and career paths rather than just a way to take college classes. Part 2 of this packet describes how Indian River State College in Florida partnered with high schools to share information about the benefits of starting on a program path in high school, even if students eventually change their minds.

Further Scale Implementation (Years 4–5)

By going all in—implementing guided pathways practices at scale for all new students—colleges will learn a great deal that they can use in refining practices in subsequent terms. Colleges should take stock of lessons learned after the initial year of implementation and plan improvements accordingly. Pathways reforms play out over several years, and colleges need to be flexible and shift gears if things do not go according to plan.

Throughout the entire implementation process, it is critical that colleges conduct training and other professional development that directly supports pathways implementation. Colleges that have been successful in implementing pathways also find that communication and engagement efforts with faculty, staff, and students need to be sustained over time.

Ongoing Improvement

Colleges' meta-majors, program maps, and other key elements of pathways reform can provide a framework and a set of tools for ongoing program review, improvement, and professional development. For example, program maps can be used to facilitate discussions with university transfer program partners and employers on how programs might need to change to stay up-to-date. Also, colleges that have adopted pathways are finding it useful to organize discussions about program learning outcomes and strategies for instructional improvement among faculty by meta-major.

Measuring the Effects of Pathways Reforms

Early Momentum Indicators

The ultimate goal of guided pathways reforms is to increase completion rates for all students, improve other long-term outcomes, and eliminate inequities in these outcomes. However, because guided pathways reforms take several years to plan and implement, and it takes even longer to see results in the ultimate outcomes of interest, colleges should track leading indicators of longer term outcomes to gauge the impact of reforms on students. Research indicates that certain measures of first-year student performance predict long-term success.⁹ Furthermore, colleges should disaggregate and track these measures by race/ethnicity, income, and other subgroups of interest. Because improvements on leading indicators are prerequisites to improvements on longer term measures of institutional performance, equitable results on leading indicators are essential to attaining equitable results on longer term outcomes. These “early momentum” indicators focus attention on creating conditions at colleges that form a foundation for eliminating equity gaps and increasing student success overall. The following are three key indicators of early momentum identified by research:

- 1. Credit momentum:** *Attempting at least 15 credits in the first term or at least 30 credits in the first academic year; completing at least 24 college credits in the first year.*

Credit momentum is easy to measure and emphasizes the need to accumulate credits to make progress toward program completion. This indicator focuses students and the college on the time it will take students to finish their programs and should motivate efforts by both to minimize that time. However, because it does not consider the content of the credits, on its own, credit momentum does not provide much insight into the effects of reforms to college-level programs.

Measuring Progress and Planning for Improvements: The Scale of Adoption Assessment

CCRC developed the Guided Pathways Scale of Adoption Assessment⁸ to provide colleges with a sense of what guided pathways entails, as well as a framework for assessing their progress and developing plans for taking pathways practices to scale for all students in all programs of study.

To complete the assessment, colleges should ideally bring together a team of people from across departments and divisions, including senior leadership, deans, academic advisors, and faculty members, as well as representatives from institutional research, information technology, the registrar’s office, and the financial aid offices.

The Scale of Adoption Assessment is also being used by state systems to gather information about college activities, practices, and challenges; to design coaching, workshops, and technical assistance activities; and to track colleges’ progress over time and reassess their needs and challenges.

2. Gateway momentum: *Taking and passing pathway-appropriate college-level math and college-level English (gateway courses) in the student's first academic year.*

Gateway momentum begins to focus attention on the content of credits. This indicator also provides insight into the extent to which colleges have removed barriers to success created by traditional prerequisite remediation, and how much they have moved to integrate academic support into college-level coursework. Since college-level math and English are often prerequisites for upper level program courses, completing these courses in the first year enables students to make progress in their programs.

3. Program momentum: *Taking and passing at least nine semester credits (three courses) in the student's field of study in the first academic year.*

A focus on this indicator of early momentum leads colleges to help students explore options and choose a path early on. Program momentum is a more explicit indicator of the potential effect of pathways reforms such as program maps and redesigned intake advising on student outcomes. This indicator is more meaningful if the college's programs are coherent and well organized.

After guided pathways reforms have been implemented at scale for several years, colleges can expect to see their effects on longer term outcomes, such as graduation rates. At this point, colleges should broaden their analysis to include the full spectrum of student outcomes that their data enable them to examine, and continue to use those findings to strengthen their pathways reforms.

Improvements in Early Momentum at Pathways Colleges

Alamo Colleges have seen large improvements in early momentum indicators after several years of implementing pathways reforms. Since 2010, Alamo Colleges have roughly doubled each of their credit momentum indicators.

As shown in Figure 3, in 2016, nearly half of first-time-ever-in-college students earned 15 or more college-level credits in their first year (up from about a quarter in 2010). Figure 4 shows that students who met the credit momentum thresholds more frequently completed a credential within three years of starting college (at any institution).

Alamo Colleges' results on gateway math and English momentum indicators tell a similar story: The percentage of new students passing gateway courses in their first year has increased (Figure 5). The percentage of students passing both college-level math and college-level English in their first year rose to 29 percent in 2016, up from 11 percent in 2010. Unsurprisingly, as shown in Figure 6, students who completed both college-level math and college-level English in their first year were much more likely to complete a college credential within three years (32 percent) than were students who did not (8 percent).

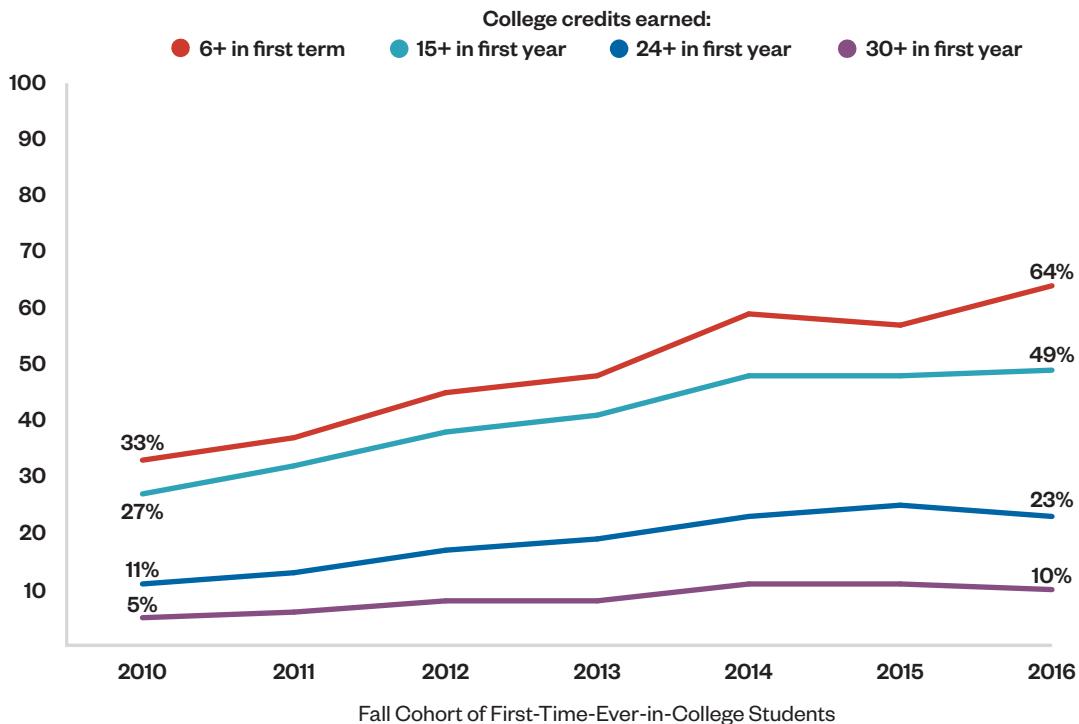
Comparing the completion rates of students who did and did not meet the early momentum thresholds suggests that these are important leading indicators of longer term success for colleges.



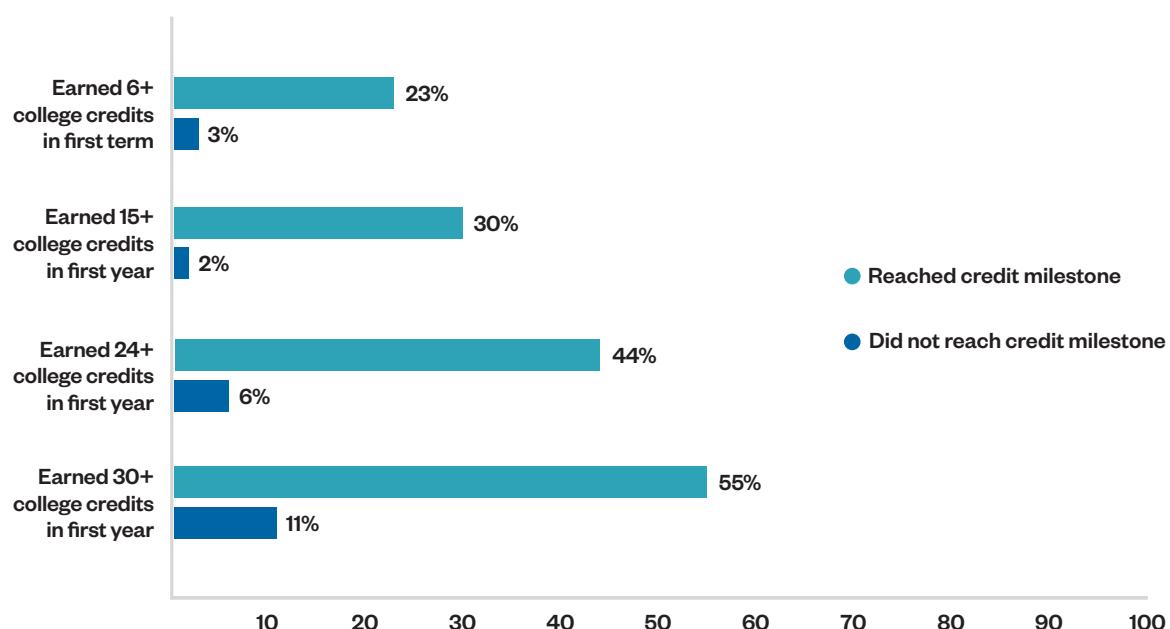
Since 2010, Alamo Colleges have roughly doubled each of their credit momentum indicators.

Figure 3.

Alamo Colleges' Credit Momentum Indicators

**Figure 4.**

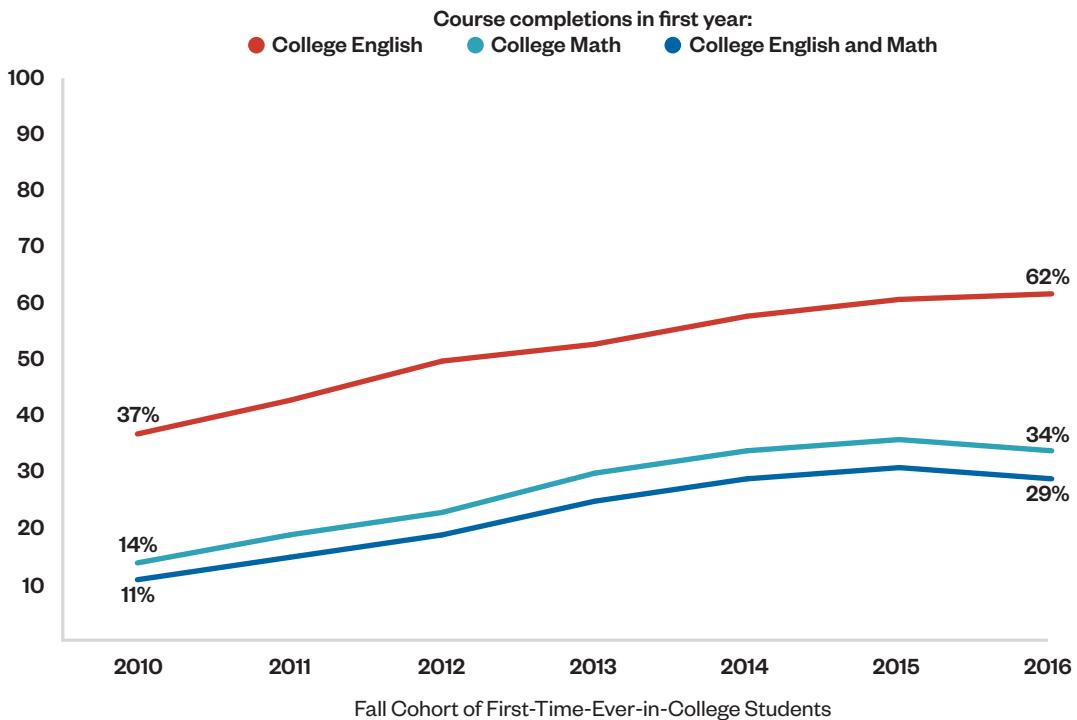
Alamo Colleges' Completion Rates by Credit Momentum Indicator Status



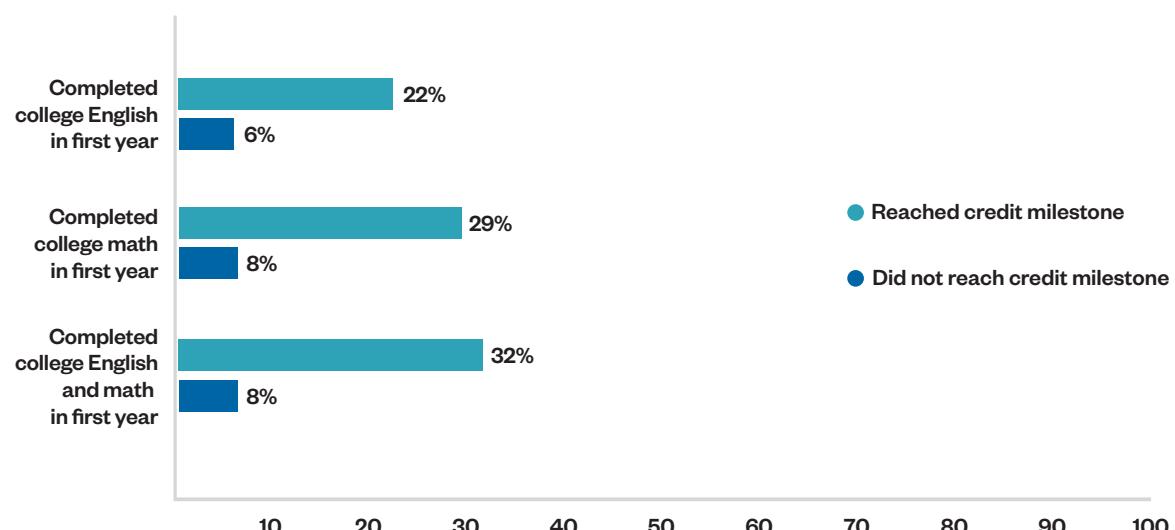
Note: This figure shows completion rates for fall 2014 first-time-ever-in-college students at Alamo Colleges who completed any college credential from any institution within three years, disaggregated by whether students met each early momentum indicator definition.

Figure 5.

Alamo Colleges' Gateway Momentum Indicators

**Figure 6.**

Alamo Colleges' Completion Rates by Gateway Momentum Indicator Status



Note: This figure shows completion rates for fall 2014 first-time-ever-in-college students at Alamo Colleges who completed any college credential from any institution within three years, disaggregated by whether students met each early momentum indicator definition.

Costs Associated With Implementing Pathways

Implementing such thoroughgoing changes as are entailed in pathways reforms requires resources. For some changes, the costs are relatively modest and can be covered by reallocating resources. These include the costs of administration and support to coordinate, communicate, and engage college stakeholders in the reform process; release time for faculty and staff time to review and redesign programs, instruction, and support services; and training and professional development on key topics, such as advising and using student information systems.

While a more precise accounting is still needed, CCRC research indicates that other changes may also require more substantial additional resources. The two biggest new costs pathways colleges report they are confronting are in hiring additional advisors, both to help students choose a path and to monitor and support their progress through to completion, and in upgrading student information systems and websites to improve program information, student progress tracking, and analytics.

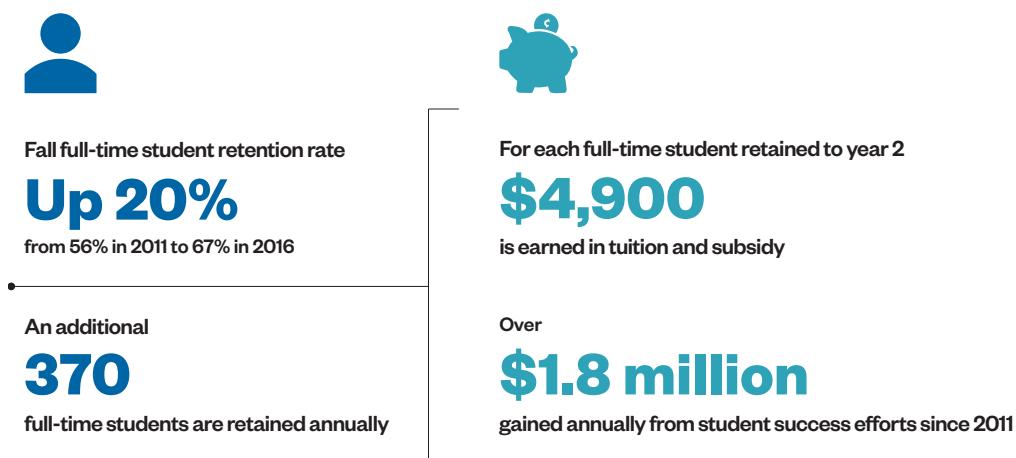


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To cover these costs in an environment of flat or declining state funding, colleges need to generate additional tuition and subsidy revenue by increasing full-time equivalent enrollment. Indeed, many colleges are moving to adopt pathways as a strategy for doing just that, both by improving recruitment with programs more clearly connected to job and further education outcomes and by increasing retention through better monitoring of students' progress along their plans.

For example, Lorain County Community College calculates that it earns an additional \$4,900 in tuition and subsidies for each student it retains from one year to the next. As shown in Figure 7, the college has used the revenue generated through its efforts to increase student retention (described in Part 1 of this packet) to hire more advisors and to otherwise improve its educational programs.

Figure 7.
Student Success Return on Investment



Note: This figure is adapted from Lorain County Community College.

Conclusion

It is an exciting time in the community college reform movement, with hundreds of institutions working to improve how students experience college and ultimately prepare them better for additional education or careers. As colleges further integrate the principles of guided pathways into their reform work, we will learn much more about what works, what does not, and how the model should be adjusted to make the biggest difference for all groups of students.

As CCRC continues to study guided pathways and work with colleges implementing the reforms, additional resources will be posted on the CCRC website—ccrc.tc.columbia.edu—including tools to assess colleges’ progress on pathways and case studies from vanguard colleges.

Endnotes

1. Kotter (n.d.).
2. Prince (2015).
3. For more on addressing the fear and anxiety that come with organizational change and with pathways specifically, see Jenkins, Lahr, and Fink (2017, pp. 43–44).
4. For more on math pathways, visit <https://dcmathpathways.org/>.
5. Belfield, Jenkins, & Lahr (2016).
6. For more on reforming advising, see Kalamkarian, Karp, and Ganga (2017).
7. For more guidance on how to choose technology solutions to support guided pathways, see AACC Pathways Project (2017).
8. Community College Research Center (2017).
9. For more on early momentum, see Jenkins and Bailey (2017).

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This implementation guide was prepared by Davis Jenkins, Hana Lahr, John Fink, and Elizabeth Ganga. Funding was provided by the Bill & Melinda Gates Foundation.

Suggested citation: Jenkins, D., Lahr, H., Fink, J., & Ganga, E. (2018). *What we are learning about guided pathways. Part 3: Timeline and tips for implementing pathways reforms*. New York, NY: Columbia University, Teachers College, Community College Research Center.

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